WHAT IS CLAIMED IS:

1.   A computer-assisted knee replacement apparatus, comprising:

a storage medium for storing a knee replacement application which, when executed by a processor, displays a series of interface images for assisting a user with a total knee replacement procedure.

2.   The apparatus of Claim 1, wherein the knee replacement application is adapted to cooperate with a tracking system to provide real-time knee implant location assistance to the user during the total knee replacement procedure.

3.   The apparatus of Claim 1, wherein the knee replacement application is adapted to display a listing of imaging devices for selection by a user for performing the total knee replacement procedure.

4.   The apparatus of Claim 1, wherein the knee replacement application is adapted to receive a selection of either a right knee or a left knee from a user for performing the total knee replacement procedure.

5.   The apparatus of Claim 1, wherein the knee replacement application is adapted to display three-dimensional image data of a subject for performing the total knee replacement procedure.

6.   The apparatus of Claim 1, wherein the knee replacement application is adapted to determine a femoral mechanical axis for a subject knee for performing the total knee replacement procedure.

7.   The apparatus of Claim 1, wherein the knee replacement application is adapted to determine a tibial mechanical axis for a subject knee for performing the total knee replacement procedure.

8.   The apparatus of Claim 1, wherein the knee replacement application is adapted to display a femoral implant sizing guide for performing the total knee replacement procedure.

9.   The apparatus of Claim 1, wherein the knee replacement application is adapted to display a center indicator for identification of a joint center of a subject by the user for performing the total knee replacement procedure.

10.   The apparatus of Claim 1, wherein the knee replacement application is adapted to receive an identification from the user of a hip center, and ankle center, and a knee center for a subject for performing the total knee replacement procedure.

11.   The apparatus of Claim 10, wherein the knee replacement application is adapted to determine a femoral mechanical axis for a subject knee from the hip center and the knee center.

12.   The apparatus of Claim 10, wherein the knee replacement application is adapted to determine a tibial mechanical axis for a subject knee from the knee center and the ankle center.

13.   The apparatus of Claim 1, wherein the knee replacement application is adapted to receive an identification of a posterior condyle and an anterior cortex of a subject femur by the user.

14.   The apparatus of Claim 13, wherein the knee replacement application is adapted to determine a femoral resection plane from the posterior condyle and the anterior cortex of the femur.

15.   The apparatus of Claim 1, wherein the knee replacement application is adapted to determine a femoral implant size for a subject femur based on physical characteristics of the subject femur selected by the user.

16.   The apparatus of Claim 1, wherein the knee replacement application is adapted to display a femoral implant guide relative to a subject knee for performing the total knee replacement procedure.

17.   The apparatus of Claim 16, wherein the knee replacement application is adapted to receive a requested distal shift of the femoral implant guide relative to the subject knee.

18.   The apparatus of Claim 16, wherein the knee replacement application is adapted to receive a requested anterior shift of the femoral implant guide relative to the subject knee.

19.   The apparatus of Claim 1, wherein the knee replacement application is adapted to display a tibial resection planning guide relative to a subject knee.

20.   The apparatus of Claim 1, wherein the knee replacement application is adapted to receive a desired tibial resection depth from the user for performing the total knee replacement procedure.

21.   The apparatus of Claim 1, wherein the knee replacement application is adapted to receive a desired tibial implant size from the user for performing the total knee replacement procedure

22.   The apparatus of Claim 1, wherein the knee replacement application is adapted to cooperate with a tracking system to display real-time alignment information for a femoral implant sizing guide relative to a subject knee.

23.   The apparatus of Claim 1, wherein the knee replacement application is adapted to automatically determine femoral resection planes corresponding to a particular femoral implant.

24. The apparatus of Claim 23, wherein the knee replacement application is adapted to automatically update the femoral resection planes relative to the subject knee in response to a selection of a different size of femoral implant by a user.

25. The apparatus of Claim 1, wherein the knee replacement application is adapted to provide an interface for shifting a location of a representation of a femoral implant relative to a subject knee.

26. The apparatus of Claim 1, wherein the knee replacement application is adapted to request from a user a desired tibial resection depth.

27. The apparatus of Claim 26, wherein the knee replacement application is adapted to automatically update a displayed tibial resection planning guide in response to receiving a selection of the desired tibial resection depth.

28. The apparatus of Claim 1, wherein the knee replacement application is adapted to receive from a user a desired tibial implant size.

29. The apparatus of Claim 1, wherein the knee replacement application is adapted to display an interface to the user for variably selecting a tibial implant size for a subject knee.

30. The apparatus of Claim 1, wherein the knee replacement application is adapted to display an interface to the user for variably selecting a desired tibial implant shift relative to a subject knee.

31. The apparatus of Claim 1, wherein the knee replacement application is adapted to cooperate with a tracking system to display real-time alignment information of a femoral resection guide relative to a subject knee.

32.   The apparatus of Claim 1, wherein the knee replacement application is adapted to automatically determine pin trajectories and locations for securing a femoral resection guide relative to a subject knee corresponding to a desired femoral implant.

33.   The apparatus of Claim 32, wherein the knee replacement application is adapted to cooperate with a tracking system to display real-time alignment information of a drill guide relative to the pin trajectories and locations.

34.   The apparatus of Claim 1, wherein the knee replacement application is adapted to cooperate with a tracking system to display real-time alignment information for a tibial resection guide relative to a subject knee corresponding to a particular tibial implant.

35.   The apparatus of Claim 1, wherein the knee replacement application is adapted to automatically determine pin trajectories and locations for securing a tibial resection guide relative to a subject knee corresponding to a desired tibial implant.

36.   The apparatus of Claim 26, wherein the knee replacement application is adapted to cooperate with a tracking system to display real-time alignment information of a drill guide relative to the pin trajectories and locations.

37.   A computer-assisted surgery system, comprising:

a display device; and

a knee replacement application executable by a processor and adapted to display a series of interface images on the display device for assisting a user to perform a total knee replacement procedure.

38.   The system of Claim 37, wherein the knee replacement application is adapted to cooperate with a tracking system to provide knee implant location assistance to the user during the total knee replacement procedure.

39.   The system of Claim 37, wherein the knee replacement application is adapted to display a femoral implant sizing guide for performing the total knee replacement procedure.

40.   The system of Claim 37, wherein the knee replacement application is adapted to determine a femoral implant size for a subject femur based on physical characteristics of the subject femur selected by the user.

41.   The system of Claim 37, wherein the knee replacement application is adapted to display a femoral implant guide relative to a subject knee for performing the total knee replacement procedure.

42.   The system of Claim 37, wherein the knee replacement application is adapted to display a tibial resection planning guide relative to a subject knee.

43.   The system of Claim 37, wherein the knee replacement application is adapted to cooperate with a tracking system to display alignment information for a femoral implant sizing guide relative to a subject knee.

44.   The system of Claim 37, wherein the knee replacement application is adapted to automatically determine femoral resection planes corresponding to a particular femoral implant.